INDEXING SYSTEM AND METHOD FOR NEAREST NEIGHBOR SEARCHES
IN HIGH DIMENSIONAL DATA SPACES

ABSTRACT

Vectors representing objects in n-dimensional space are approximated by local polar

5   coordinates on partitioned cells of the data space in response to a query, e.g., a query data vector

entered with a request to find "k" nearest neighbors to the query vector. A set of candidate near

neighbors is generated using the approximations, with the local polar coordinates being

independent of the dimensionality of the data space. Then, an answer set of near neighbors is

returned in response to the query. Thus, the present invention acts as a filter to reduce the

10   number of actual data vectors in the data set that must be considered in responding to the query.